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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/727,651	12/05/2003	Shunpei Yamazaki	12732-051002	8958
26171	7590	04/22/2005	EXAMINER	
FISH & RICHARDSON P.C. 1425 K STREET, N.W. 11TH FLOOR WASHINGTON, DC 20005-3500			SEFER, AHMED N	
			ART UNIT	PAPER NUMBER
			2826	

DATE MAILED: 04/22/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

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**Office Action Summary**

Application No.

10/727,651

Applicant(s)

YAMAZAKI ET AL.

Examiner

A. Sefer

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☐ Responsive to communication(s) filed on \_\_\_\_.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-11, 19-30, 38-42, 80-83, 121 and 122 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 19-30, 38-42, 80-83, 121 and 122 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☒ Certified copies of the priority documents have been received in Application No. 09/874,204.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date 4/04 and 10/04.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_.

## DETAILED ACTION

### *Specification*

1. The disclosure is objected to because of the following informalities: The recitation, “wherein the lattice mane ...” of claims 2, 20 and 21 should read “wherein the lattice plane ...” and the words, “where in” of claims 10 and 11, should read “wherein”.

Appropriate correction is required.

### *Claim Rejections - 35 USC § 112*

2. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

3. Claims 1, 20 and 21 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the limitation “wherein the lattice plane ... {111} ...”. There is insufficient antecedent basis for the lattice plane {111} in the claim.

Claim 20 recites the limitations “wherein an orientation ratio of a lattice plane {101} ... is not smaller than 20%, the lattice plane {101} having an angle not larger than 10 degrees ...” and “wherein an orientation ratio of a lattice plane {101} ... is not smaller than 3%, the lattice plane {101} having an angle not larger than 10 degrees ...”. It is not understood how an orientation ratio of a lattice plane {101} could be not smaller than 20% and not smaller than 3% at the same time.

The limitations “wherein an orientation ratio of a lattice plane {101} ... is not smaller than 20%, the lattice plane {101} having an angle not larger than 10 degrees ...” and “wherein

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an orientation ratio of a lattice plane {101} ... is not smaller than 3%, the lattice plane {101} having an angle not larger than 10 degrees ..." recited in claim 21 render the claim indefinite. It is not understood how an orientation ratio of a lattice plane {101} could be not smaller than 20% and not smaller than 3% at the same time.

### ***Double Patenting***

4. Applicant is advised that should claim 20 be found allowable, claim 21 will be objected to under 37 CFR 1.75 as being a substantial duplicate thereof. When two claims in an application are duplicates or else are so close in content that they both cover the same thing, despite a slight difference in wording, it is proper after allowing one claim to object to the other as being a substantial duplicate of the allowed claim. See MPEP § 706.03(k).

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

6. Claims 1-11, 19 and 39-42 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. ("Yamazaki") JP 11-18563.

Yamazaki discloses (see figs. 1, 2, 4-15 and pars. 0079-0080 and 0120 of equivalent US PG-Pub 2002/0040981) a thin film transistor comprising: at least a channel forming region in a crystalline semiconductor film comprising silicon. Note that the limitations regarding the plane

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orientation having a certain angle, absent evidence to the contrary, would be inherent and that the channel forming region would comprise the recited plane orientation having the desired angle because the process of crystallizing Yamazaki's amorphous silicon film is similar to the process disclosed in the instant application.

As to the method of detecting, it does not have a patentable weight since "product by process" claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685 and *In re Thorpe*, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

Regarding claims 2 and 3, Yamazaki discloses (par. 0080 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising nitrogen and carbon and oxygen each within the recited range.

Regarding claims 5 and 6, Yamazaki discloses (par. 0079 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising germanium at a concentration within the recited range.

Regarding claims 7 and 8, Yamazaki discloses (par. 0080 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising nitrogen and carbon and oxygen each within the recited range.

Regarding claims 9, 10, 39 and 40 Yamazaki discloses (pars. 0112 and 0296 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising a metal

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element selected from the group Ni, Co and Fe (as in claims 10 and 40) at a concentration within the recited range.

Regarding claims 11 and 41, Yamazaki discloses (pars. 0191 and 0217 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film having a thickness within the recited range.

Regarding claims 19 and 42, Yamazaki discloses (par. 0108 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising a halogen element.

7. Claims 20-30, 38, 80-83, 121 and 122, as understood, are rejected under 35 U.S.C. 102(b) as being anticipated by Yamazaki et al. ("Yamazaki") JP 11-18563.

Yamazaki discloses (see figs. 1, 2, 4-15 and pars. 0079-0080 and 0120 of equivalent US PG-Pub 2002/0040981) a semiconductor device comprising: at least a channel forming region in a crystalline semiconductor film comprising silicon. Note that the limitations regarding the plane orientation having a certain angle, absent evidence to the contrary, would be inherent and that the channel forming region would comprise the recited plane orientation having the desired angle because the process of crystallizing Yamazaki's amorphous silicon film is similar to the process disclosed in the instant application.

As to the method of detecting, it does not have a patentable weight since "product by process" claims are directed to the product per se, no matter how actually made, *In re Hirao*, 190 USPQ 15 at 17 (footnote 3). See also *In re Brown*, 173 USPQ 685 and *In re Thorpe*, 227 USPQ 964, 966. Therefore, the way the product was made does not carry any patentable weight as long as the claims are directed to a device. Further, note that the applicant has the burden of proof in such cases, as the above case law makes clear. Also see MPEP 2113.

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Regarding claims 22 and 23, Yamazaki discloses (par. 0080 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising nitrogen and carbon and oxygen each within the recited range.

Regarding claims 24 and 25, Yamazaki discloses (par. 0079 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising germanium at a concentration within the recited range.

Regarding claims 26 and 27, Yamazaki discloses (par. 0080 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising nitrogen and carbon and oxygen each within the recited range.

Regarding claims 28, 29, 80 and 81 Yamazaki discloses (pars. 0112 and 0296 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising a metal element selected from the group Ni, Co and Fe (as in claims 29 and 81) at a concentration within the recited range.

Regarding claims 30 and 82, Yamazaki discloses (pars. 0191 and 0217 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film having a thickness within the recited range.

Regarding claim 38 and 83, Yamazaki discloses (par. 0108 of equivalent US PG-Pub 2002/0040981) a crystalline semiconductor film comprising a halogen element.

Regarding claims 121 and 122, Yamazaki discloses a semiconductor device comprising one selected from the group consisting cell phone, a video and a digital camera.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to A. Sefer whose telephone number is (571) 272-1921.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nathan Flynn can be reached on (571) 272-1915.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ANS  
April 14, 2005

NATHAN J. FLYNN  
SUPERVISORY PATENT EXAMINER  
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